Characteristics of Veterans in Hawaii with and without Diagnoses of Post-Traumatic Stress Disorder

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A total of 118 combat veterans seeking services at the VA Medical Center in Honolulu were assessed on a variety of demographic and psychometric dimensions, permitting the first systematic comparison on the measured variables between veterans with and without PTSD in the multicultural population of veterans in Hawaii. The results have implications for medical interventions with this population.

Introduction

Post-traumatic stress disorder (PTSD) is an anxiety disorder arising from the experience of a significant distressing event—such as a serious threat to one's life—and characterized by 3 major classes of symptoms in the *Diagnostic and Statistical Manual*: (1) Cognitive, in the form of persistent reexperiencing of the event (eg, in dreams or flashbacks); (2) behavioral, in the form of persistent avoidance of stimuli associated with the event (eg, avoidance of thoughts or feelings associated with the trauma or emotional detachment); and (3) physiological, in the form of persistent arousal (eg, disordered sleep or heightened physiological reactivity).[1]

The seriousness of PTSD as a disorder among war veterans is mainly evidenced by the results of the Vietnam campaign. Of approximately 3.5 million Vietnam veterans in the U.S., epidemiological studies in 1988 found that about 15%, or perhaps one-half million, satisfy the diagnostic criteria for PTSD.[2] Approximately 30% of all combat veterans continue to have difficulties of some kind in social adjustment. For veterans with high exposure to combat, PTSD symptoms can occur in more than 38%. Using the above percentages, in Hawaii in a population of approximately 25,000 Vietnam veterans more than 3,500 would be expected to suffer from PTSD.

From the standpoint of health care, combat-related PTSD is an expensive and demanding problem. It is estimated that 26% of all mental health outpatient visits and 19% of all inpatient discharges from Veterans Administration (VA) medical centers across the U.S. are owed to PTSD sufferers. These data suggest that substantial PTSD-related distress is expressed in visits to medical practitioners. It is, therefore, important for physicians to be aware of the characteristics of patients who have been recognized to have symptoms of PTSD.

Hawaii's multiethnic population provides a unique opportunity for the study of PTSD and its treatment cross-culturally. A disproportionate impact of combat stress and/or cultural readjustment in minority groups is suggested by studies of PTSD nationally, which have found the prevalence rate among African Americans to be 1.5 times and among Hispanics to be 2.0 times greater than among Caucasians.[2] Unfortunately, such statistics on the numbers of individuals in ethnic groups concentrated in Hawaii, most notably Asian Americans or Pacific Islanders who were in the Armed Forces in Vietnam, are not available. However, estimates by Roger Hamada PhD to the U.S. Senate Committee on Veterans Affairs (unpublished data, 1990) based on a probability sample suggest that the 2 groups combined may be as large as 34,600 individuals nationally. As also pointed out by this observer, there are reasons to believe that the characteristics of war-time stressors for the ethnic groups unique to Hawaii may have been similarly exaggerated owing to culture-specific factors.

Clinical investigations of PTSD have been focused on both assessment and treatment, with greater effort in the former area. In recent studies, a multimodal approach to assessment has been advocated in efforts to improve the accuracy of diagnoses.[3-5] Prior research of this kind enables the use of a wide variety of psychometric instruments with documented reliability and validity for the assessment of PTSD with a high degree of confidence.[6] These efforts provided a rationale for the first systematic study of symptoms characteristic of PTSD in a sample of the population of veterans in Hawaii, including a variety of demo-

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graphic features. These data are presented in an effort to enhance understanding of the nature, severity, and predictors of this serious disorder among combat survivors in this community, paving the way for more effective assessment and treatment.

Method

Subjects.—The subjects were 118 combat veterans who sought services at the Honolulu Veterans Administration (VA) Medical Center during the period January 1989 to August 1993 from the PTSD Clinical Team patient pool and the Stress Disorders Laboratory research subject pool. Subjects were further selected in terms of completion of the minimal set of psychometric instruments discussed below to meet criteria for analyses. All subjects signed an informed consent form approved by the VA Human Subjects Committee. The mean age of these veterans was 46, ranging from 27 to 73 years of age. Overall (of those who responded to the item), 80% of the veterans reported their residence to be on Oahu, 14% on Hawaii, and the remainder on other islands.

Measures.—Completion of the following questionnaires were minimally required for inclusion in the analyses, details of which will be described below: (1) A demographics questionnaire; (2) the Initial Screening Questionnaire (ISQ); (3) the Minnesota Multiphasic Personality Inventory versions 1 or 2; and (4) the Mississippi Scale for Combat-related PTSD.[7] The patients from the PTSD Clinical Team pool had completed an inconsistent variety of other diagnostic instruments ordered by a number of treating clinicians over several years, rendering use of additional data on these veterans beyond the scope of the current analyses. Only comparable data from the Stress Disorders Laboratory subjects were analyzed in order to equate the 2 data sets.

The demographics questionnaire is a 20-item self-report questionnaire utilizing, wherever possible, a check-list format for eliciting a wide variety of information regarding personal, military, and family status of veterans. The surveyed areas of primary interest in this analysis were: Age, island of residence, employment status, number of years residing in Hawaii, ethnicity, marital status, number of children, branch of service, rank, combat theater, service-connected disability, treatment facility utilized, recent hospitalization, and type of current problem(s).

The Initial Screening Questionnaire is a 40-item, 6-point Likert-type scale for frequency or PTSD symptoms developed by Nathan Denny for use by the PTSD Clinical Team at the Honolulu VA Medical Center. The internal consistency of the scale obtained with the current sample of subjects is high (coefficient alpha = .92). A factor analysis of the scale prior to the analyses in this report yielded 3 principal components, approximately interpretable as follows: Factor ISQ1—intrusiveness of memories/hypervigilance; Factor ISQ2—social maladjustment; Factor ISQ3—anger/avoidance. Subsequent analyses incorporated only items within each factor that correlated .45 or more with the variable: ISQ1, 17 items; ISQ2, 9 items; ISQ3, 7 items.

Both the original MMPI and the more recent MMPI-2 were used in the assessment of the subjects owing to the period during which the subjects were assessed—the MMPI-2 was adopted for use in these patient populations in 1992. Extensive discussions of the reliability and validity characteristics of these scales may be found in the administration manuals accompanying these instruments.[8]

The Mississippi Scale for Combat-Related PTSD is a 35-item self-report scale using 5-point Likert-type items that samples the symptoms of PTSD outlined in DSM-IV plus certain associated features. The higher the score, the more likely the diagnosis of PTSD. Three initial studies confirmed high internal consistency of the scale (coefficient alpha = .94), high one-week test-retest reliability (Pearson r = .97), and, in differentiating between patients with and without PTSD, a sensitivity of .93 (proportion of PTSD subjects identified), specificity of .89 (proportion of nonPTSD subjects identified), and overall efficiency (hit rate) of .90, demonstrating high diagnostic accuracy.[7]

Results

In accordance with their scores on the Mississippi Scale for Combat-Related PTSD, the subjects were assigned to 2 groups, PTSD and nonPTSD. Scores on this instrument were employed for group classification since they provided a clear, objective basis for assignment with a strong empirical rationale. In previous validation studies, a cutoff score of 107 was shown to maximize classification accuracy for presence of the disorder.[7] In this sample, a slightly more conservative score of 109 was selected because this value was at a natural break in the obtained distribution of scores. Thus, there was no overlap in the distributions of Mississippi Scale scores for veterans in the PTSD and nonPTSD groups. This method for group assignment yielded an N of 85 for the PTSD group and 33 for the nonPTSD group. The results of additional scales, outlined below served to validate this selection criterion.

The significance level of all inferential statistical tests reported below was set at .05. Where appropriate, the tests employed included analyses of variance (ANOVAs), t-tests, and chi-squares.

The principal demographic characteristics of the distributions of veterans with and without PTSD are shown in Tables 1 and 2 along with related statistics and probabilities. The veterans' theater of combat was predominantly Vietnam for both groups. The mean age of the veterans with PTSD (44.8) was significantly lower than that of those without the disorder (48.3)—thus, in 1970, at approximately the midpoint of the Vietnam

Table 1.—Demographics: Means and Standard Deviations of Characteristics of PTSD and nonPTSD Veterans

	PTSD (N = 85)		NonPTSD (N = 33)			
	M	SD	M	SD	t / p	df
Age	44.8	5.6	48.3	9.6	2.50 / .0138	116
Years in Hawaii	22.5	17.4	25.4	18.6	.59 / .5566	55
No of Children	2.0	1.6	2.2	1.9	.43 / .6679	105

Note.—Differences between df and N reflect nonresponding on the related demographics questionnaire item.

conflict, the PTSD veterans were 21.8 years of age; the nonPTSD veterans were 25.3. Also, the PTSD group was significantly more likely to have been recently hospitalized for a psychiatric disorder (37% versus 9%) to self report their disability as PTSD (29% versus 9%) and, marginally significantly, to be unemployed (68% versus 48%). Although the PTSD veterans were more likely to report being unmarried, to have a service-connected disability, and a substance abuse problem, on these dimensions the 2 groups did not differ significantly, perhaps owing either to the sample size or to the relatively conservative chi-square statistical test necessarily employed.

In addition, Table 2 shows an apparent lower representation of Asian-Americans and a higher representation of Hawaiians and part Hawaiians in the PTSD sample relative to the nonPTSD sample, although this difference was statistically nonsignificant. However, in follow-up analyses comparing these data with the distributions of these ethnic groups in Hawaii (Asian-American, 39.2%, Hawaiian/Pacific Islander, 17.6%, Caucasian, 27.0%), it was found that this pattern of ethnic representation for the PTSD subjects was significantly different (χ^2 = 13.91, $p < .001$, $df = 2$). It was also found that the apparent pattern of underrepresentation of Hawaiians and overrepresentation of Caucasians in the group without PTSD (Table 2) was significant ($\chi^2 = 7.80$, $p < .025$, $df = 2$). In short, while Caucasians appeared to be overrepresented in both groups of veterans, Hawaiians appeared to be differentially overrepresented and Asian-Americans differentially underrepresented in the group with PTSD relative to the group without PTSD, by comparison with the population of the state at large.

Not shown in the tables, in response to an item in the demographics questionnaire that asked the subjects to indicate significant "problems" they were currently experiencing in their lives, the veterans with PTSD reported significantly more problems (mean = 5.5 out of a possible 8) than those without PTSD (mean = 4.2) ($t = 3.17$, $p = .002$, $df = 96$).

Table 2.—Demographics: Frequencies and Percents of the Distributions of PTSD and nonPTSD Veterans

		PTSD (N = 85)		NonPTSD (N = 33)		
		f	%	f	%	χ^2 / p
Employed	No	50	68.5	13	48.1	3.50/ .061
	Yes	23	31.5	14	51.9	
Ethnicity	Asian Am	11	17.2	8	32.0	4.79 / .091
	Hawaiian	17	26.6	2	8.0	
	White	36	56.2	15	60.0	
Family status	Married	28	34.6	14	45.2	1.07 / .300
	Unmarried	53	65.4	17	54.8	
Combat theater	Vietnam	69	90.8	23	82.4	1.50 / .221
	Other	7	09.2	5	17.9	
Service-connected disability	Yes	60	73.2	22	68.8	0.22 / .637
	No	22	26.8	10	31.2	
Type of disability	PTSD	25	29.4	3	9.1	5.42 / .020
	Other	60	70.6	30	90.9	
Recently hospitalized	Yes	31	36.9	3	9.1	8.89 / .003
	No	53	63.1	30	90.9	
Substance abuse problem	Yes	21	50.0	7	30.4	2.32 / .128
	No	21	50.0	16	69.6	

Note.—Differences between total frequencies and N reflect other small categories of membership (eg, other ethnicities) or nonresponders, which were not included in the statistical analyses.

Measures of considerable interest were also derived from the psychometric instruments, the Mississippi Scale, the MMPI, and the ISQ, which are shown in Table 3 along with related statistics.

Five measures of PTSD provided strong cross-validation for the use of the criterion test, the Mississippi scale. On the latter, the table shows that a large separation of the means for the PTSD and nonPTSD group resulted from using the 109 cutoff score. On the Initial Screening Questionnaire, the PTSD subjects also differed significantly in terms of a higher level on all 3 factors related to the disorder—ISQ1, intrusiveness of memories/hypervigilance, ISQ2, social maladjustment, and ISQ3, anger/avoidance. On the more standardized instrument, the MMPI, it is also notable that the veterans classified with PTSD on the Mississippi also had significantly higher scores on the Keane PTSD scale, as well as on the profile of subscales identified with the disorder by other investigators, namely, F ("over reporting" of symptoms), depression, and schizophrenia. This F, 8, 2 configuration was previously identified with PTSD by Keane et al,[10] and replicated by Blanchard et al.[11] Other findings of interest on the MMPI were significant elevations on scales 3, 4, 6, 7, 10, and the anxiety scale, showing a severe and general pattern of psychiatric disturbance and social withdrawal in these veterans.

Finally, individual analyses of possible differences among the 3 ethnic groups with PTSD—Asian-Americans, Hawaiians, and Caucasions—failed to yield statistically significant differences on all but one of the above dimensions, probably owing to the small sample sizes when the PTSD group was subdivided with respect to ethnicity. However, on the Mississippi scale, the ethnicity factor was significant ($F = 3.16$, $p = .0495$, $df = 2/61$). Apparently, this effect was produced by a lower mean score in the Asian-American group (121.2) relative to the other 2 groups, (Hawaiian, 133.0; Caucasian, 132.3).

Summary and Conclusions

In summary, the typical Hawaii veteran seeking services at the Veterans Administration Medical Center and with a diagnosis of PTSD on a standardized instrument (the Mississippi Scale for Combat-related PTSD) is male, Caucasian or Hawaiian (in lesser numbers, Asian-American), a veteran of combat in Vietnam, younger than a veteran without PTSD, a resident of Oahu for more than 20 years, unemployed, unmarried, has a service-connected disability, and has a relatively high reported incidence of recent hospitalization for psychiatric disorders. He also is likely to report a substance abuse problem, and he reports a number of significant difficulties from a list of 8 possible problem areas. On many of these variables, the differences between veterans with and without PTSD were statistically significant in this comparison.

In addition, the average veteran in Hawaii diagnosed with PTSD on one scale (the Mississippi) also manifests significant

Table 3.—Psychometrics: Means and Standard Deviations of the Measures on PTSD and nonPTSD Veterans

	PTSD (N = 85)		NonPTSD (N = 33)		
	M	SD	M	SD	t / p
Mississippi	130.6	13.7	90.8	13.1	na*
ISQ F1	67.6	18.4	41.2	12.9	8.84 / .0001
ISQ F2	38.4	7.4	28.0	6.9	6.95 / .0000
ISQ F3	23.6	6.8	15.8	5.6	5.81 / .0000
MMPI Valid. (T-Scores)					
L	50.4	9.1	49.8	9.0	.22 / .8189
F	85.4	17.0	68.2	12.3	4.07 / .0001
K	40.1	7.3	45.8	10.4	2.23 / .0345
MMPI Clin. (T-Scores)					
HY (1)	75.0	15.5	65.2	17.0	2.33 / .0228
D (2)	86.4	15.8	68.4	15.8	4.32 / .0001
HS (3)	71.8	11.8	63.8	15.6	2.36 / .0212
PD (4)	76.7	11.5	68.5	14.4	2.52 / .0139
MF (5)	61.8	13.4	55.9	10.5	1.76 / .0823
PA (6)	81.2	15.4	65.9	13.0	3.92 / .0002
PT (7)	84.0	15.0	66.4	11.1	4.71 / .0000
SC (8)	87.5	18.3	73.6	12.0	3.66 / .0006
MA (9)	67.5	14.8	63.0	11.0	1.24 / .2202
SI (10)	67.5	12.1	53.9	11.6	4.29 / .0001
Anxiety (A)	80.4	11.5	67.7	11.0	2.52 / .0192
PTSD (PK)	75.2	17.0	61.6	16.9	3.05 / .0032

*Note.—A statistical test on the means from the Mississippi Scale was not necessary because the subjects had been assigned to groups on this variable and the 2 distributions of scores were nonoverlapping.

levels of maladjustment on other instruments designed to assess the cognitive, behavioral, and somatic DSM-IV criteria for this disorder, demonstrating both construct and criterion validity. Moreover, the Hawaii veteran with this diagnosis shows significant levels of psychopathology on a majority of the clinical dimensions represented on the MMPI, in this respect resembling patterns typical of veterans assessed in studies of Mainland populations.[6] Relatedly, significant elevations on the anxiety subscale of the MMPI confirms elevations on this measures by other investigators.[6,11] On the clinical scales of the MMPI, the only differences that were not statistically significant between PTSD and nonPTSD subjects in the analyses also are not of particular interest in assessing the disorder, namely, the masculinity-femininity scale and the hypomania scale. Thus, overall, PTSD among Hawaii's veterans as assessed with these instruments is an extremely serious disorder with multiple ramifications for personal distress, medical difficulties, and social maladjustment, to name a few areas of major concern.

One of the findings of interest was the age difference between the veterans presenting with PTSD: Nearly 4 years younger than the veterans without the disorder. This result also parallels national statistics. For instance, in a national study cited earlier, it was found that rates of PTSD were significantly higher (18% to 19%) in veterans of the Vietnam conflict who were born after 1945 than in those born prior to 1945 (4% to 10%).[2] The mechanism for this difference may be complex, but at least some theorists have attributed the effect to the incompleteness of the developmental process in the young veteran, with possible disruption during exposure to the traumas of combat.[12]

Overall, these data are the first to statistically demonstrate the severity and pervasiveness of the symptoms of PTSD in the typical Hawaii veteran assessed with this disorder. The similarity between this population and others studied among Mainland veterans demonstrates both the appropriateness of standardized diagnostic tools for clinicians working with these patients and the relatively low impact of cultural variables for prediction of the disorder in this setting. Further support for the tentative notion that cultural variables may not be of great importance at this level of assessment of combat-related PTSD in the Hawaii population were the large numbers of statistical tests that were conducted across both the demographic and psychometric measures, all but one of which (the Mississippi Scale) were nonsignificant between ethnic groups. A difficulty with this interpretation, of course, is that the numbers of veterans represented in the ethnic categories examined, Asian-American, Hawaiian, and Caucasian, were relatively small.

There is some suggestion in the analyses, however, that the distributions of major ethnic groups among this veteran sample may be different from representations of the groups in the state. In analyses comparing distributions of these groups in the sample to the population of Hawaii at large, among veterans with PTSD Asian-Americans were underrepresented and Caucasians and Hawaiians (including part Hawaiians) were overrepresented. It is very difficult to assess the meaning or significance of these data from the standpoint of the relative impact of combat on PTSD in these respective groups since, as indicated earlier, there are no data to show the relative distributions of these groups from Hawaii among veterans of Vietnam generally. It is also impossible with our data to determine whether these differences are due to differential patterns affecting contact with the VA Medical Center or to differential risk for PTSD. The data are suggestive, however, of the potential need for culturally sensitive therapists and treatment protocols given the relatively large numbers of Hawaiians in this sample.

This study is an important first step in the systematic assessment of PTSD in Hawaii's veterans. The identification of sensitive psychometric instruments, specific patterns of symptomatology, and relevant demographic features are all essential in the effective delivery of health services—including general medical and psychiatric, psychological, nursing, and other services—for the large and seriously affected group of PTSD sufferers in this population.

References

1. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders.* 4th ed. Washington, DC;1994:424-429.
2. Kulka R, Schlenger W, et al. *National Vietnam veterans readjustment study advance data report: Preliminary findings from the national survey of the Vietnam generation.* Executive Summary. Washington, DC: Veterans Administration. 1988.
3. Lyons JA, Gerardi RJ, et al. Multidimensional assessment of combat-related PTSD: Phenomenological, psychometric, and psychophysiological considerations. *J of Traumatic Stress.* 1988;3:373-394.
4. Malloy PF, Fairbank JA, Keane TM. Validation of a multimethod assessment of posttraumatic stress disorders in Vietnam veterans. *J Consult Clin Psychol.* 1983;51:488-494.
5. Chemtob CM, Carlson JG. A theoretical model for the systematic treatment of PTSD. Presented at the annual meeting of the Western Psychological Association; 1994; Kona, Hawaii.

6. Orr SP, Claiborn JM, et al. Psychometric profile of posttraumatic stress disorder, anxious, and healthy Vietnam veterans: Correlations with psychophysiologic responses. *J Consult Clin Psychol*. 1990;58:329-335.
7. Keane TM, Caddell JM, Taylor KL. The Mississippi scale for combat-related PTSD: Three studies in reliability and validity. *J Consult Clin Psychol*. 1988;56:85-90.
8. Butcher JN, Dahlstrom WG, et al. *Manual for the restandardized Minnesota Multiphasic Personality Inventory: MMPI-2*. Minneapolis, Minn: University of Minnesota Press; 1989.
9. Keane TM, Malloy PF, Fairbank JA. Empirical development of an MMPI sub-scale for the assessment of combat-related post-traumatic stress disorder. *J Consult Clin Psychol*. 1984;52:888-889.
10. Blanchard EG, Wittrock D, et al. Cross-validation of a Minnesota Multiphasic Personality Inventory (MMPI) subscale for the assessment of combat-related post-traumatic stress disorder. *J Psychopathol and Behavioral Assessment*. 1988;10:33-38.
11. Fairbank JA, Keane RM, Malloy PF. Some preliminary data on the psychological characteristics of Vietnam veterans with posttraumatic stress disorders. *J Consult Clin Psychol*. 1983;51:912-919.
12. Lanier RS. War trauma and human development: The Vietnam experience. In: Sonnenberg S, Blank A, et al, eds. *The trauma of war: Stress and recovery in Vietnam veterans*. Washington, DC: American Psychiatric Press, Inc.;1985:31-56.

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ventricular tachycardia: clinical and electrophysiologic characteristics. *Circulation*. 1983;68:917-927.
21. Toivonen L, Nieminen M. Persistent ventricular tachycardia resulting in left ventricular dilatation treated with verapamil. *Int J Cardiol*. 1986;13:361-365.
22. Morady F, Harvey M, Kalbfleisch SJ, El-Atassi R, Calkins H, Landberg JJ. Radiofrequency catheter ablation of ventricular tachycardia in patients with coronary artery disease. *Circulation*. 1993;87:363-372.
23. Coggins DL, Lee RJ, Sweeney J, Chein WW, Van Hare G, Epstein L, Gonzalez R, Griffin JC, Lesh MD, Scheinman MM. Radiofrequency catheter ablation as a cure for idiopathic tachycardia of both left and right ventricular origin. *JACC*. 1994;1331-1341.
24. Brugada P, Brugada J, Mont L, Smeets J, Andries EW. A new approach to the differential diagnosis of a regular tachycardia with a wide QRS complex. *Circulation*. 1991;83:1649-1659.

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